

INDIGENOUS PLANT USE OF THE AMAXHOSA PEOPLE ON THE EASTERN BORDER OF THE GREAT FISH RIVER RESERVE, EASTERN CAPE

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ABSTRACT

The use of indigenous and some naturalised exotic plant species by Xhosa-speaking people in nine villages in the former Ciskei is documented and summarised in a table of 83 plant species. Plant use and indigenous knowledge was recorded over a two year period culminating in an intensive four week study to confirm and clarify data. Eight case studies based on the principles of Participatory Rural Appraisal (PRA) were undertaken with 87 informants. Sixty-one percent of the total number of plant species recorded were used for medicinal purposes, 7% for customs and cultural purposes, 18% for food and the remaining 14% for fuel, construction and veterinary purposes. Species are ranked according to degree of importance and perceived abundance by user groups.

Keywords: Ethnobotany, amaXhosa, Eastern Cape

INTRODUCTION

Much is known about the floristic and faunistic composition of the Great Fish River Reserve Complex (Dyer, 1937; Palmer, 1981; Everard, 1987; Hoffman & Everard, 1987; Palmer, 1988; Palmer, Crook & Lubke, 1988; Palmer & Avis, 1994; Evans, Avis & Palmer, 1997) and its surroundings, although very little published information exists on the use of plants by the amaXhosa people of the area (Cocks, 1996; Dold & Cocks, 1997). It is evident from the many successful amaYeza stores (Xhosa pharmacies) in the Peddie and King William's Town districts (Cocks, 1996) that there is a substantial trade in wild harvested plant material. Many people in these areas collect and use plant material for their own use. A rich and diverse cultural knowledge has been passed down orally since the 18th century and in areas of abject poverty is still relied on to sustain a certain quality of life. The diverse and restricted flora of the area is unique thus exhibiting unique plant use by the local communities.

A study of the trade in plant material and products in the Peddie and King William's Town Districts revealed that a substantial quantity of wild harvested plants are sourced in the current study area (Cocks, 1996) resulting in a need to

assess these resources. A report on ethnobotanical resources was undertaken (Cocks & Dold, 1997) confirming this to be an area of high harvesting intensity both locally and by commercial gatherers from as far afield as Gauteng. The aim of this paper is to document species specific plant use at a household level in the same study area and to assess the degree of importance of these to users. Perceived abundance and accessibility of species is recorded with regard to both communal land and restricted reserve land.

THE STUDY AREA

The Great Fish River Reserve complex (Double Drift, Sam Knott and Andries Vosloo reserves) is situated 40km North-East of Grahamstown in the Eastern Cape (Fig.1). The study area lies between 33°00' and 33°09' S and 26°37' and 26°55' E. The vegetation type is the Fish River Scrub category of Acock's (1988) Valley Bushveld. In its undamaged state it is an extremely dense, semi-succulent thorny scrub, about 2m high, however, due to overgrazing it has been opened up and invaded by the prickly pear (*Opuntia ficus-indica*) and colonised by *Pteronia incana*. Palmer (1981) recognises 13 plant communities ranging from dwarf shrubland

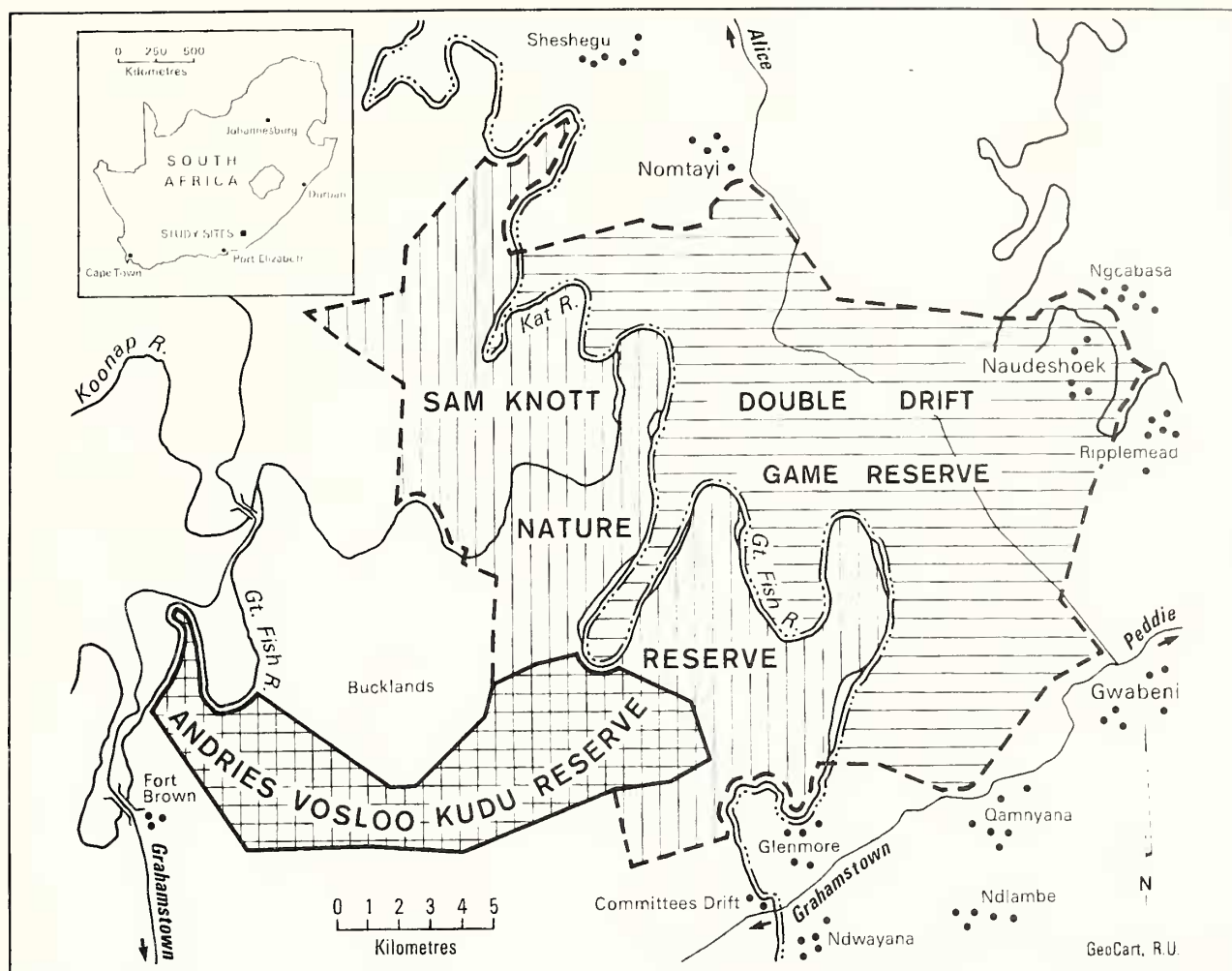


Figure 1. The Great Fish River Reserve Complex

characterised by the *Felicia fascicularis* - *Walafrida geniculata* association, through the succulent bushclump savanna of the *Portulacaria afra* - *Ruellia cordata* association to the woodland of the southern slopes characterised by the *Hippobromus pauciflorus* - *Schotia latifolia* association. The vegetation comprises a mosaic of bushclumps and grasslands, with as many as 18 woody species occurring in one bushclump. This succulent thicket type is restricted to the immediate Fish River Valley area. The introduction of large numbers of goats and cattle has resulted in overgrazing and degradation of the vegetation, which is characterised by a reduction in total plant cover and a loss of endemic species, particularly succulents and bulbous plants (Kerley, 1996). It has been found that 16.3% of plants recorded for medicinal purposes in the study area fall into these life form categories. According to the publication Nakor (1981) only 1.2% of the total extent of Valley Bushveld is currently conserved.

Geologically the area comprises the Middleton formation which consists predominantly of grey and red mudstone and sandstone. The climate may be described as warm temperate and the mean annual rainfall is 434mm, with peaks in October and March (Palmer, 1988).

There are nine villages adjoining the reserve on its eastern boundary (former Ciskei), and of these six were included in the study: Nomtayi, Ripplemead, Tweni, Ndwayana, Glenmore and Gwabeni. (Fig. 1). Double Drift Reserve was also visited and data collected from eight game guards employed by East Cape Nature Conservation. A culturally important site at Fort Montgomery was visited. The villages represent the entire eastern boundary of the reserve. Most of this area consists of communal land where little control exists over grazing and other forms of resource use. The human population density is approximately 70 people per square kilometre, with an unemployment rate of more than 70%, resulting in a local economy based on state pensions and subsistence farming.

Stocking rates are estimated to be three to five times the recommended rate (Ainslie, *et al.*, 1994). A large number of inhabitants rely on natural resources for fuel, building material, medicines and to a lesser extent food and income through resale.

An historical and socio-political overview of the Great Fish River Reserve Complex can be found in Webley's (1997) Eastern Cape Cultural Resources Management Pilot Project on the Great Fish River Reserve. However, it is important to note here that the amaXhosa people inhabiting the area are the descendants of amaXhosa, and to some extent Khoekhoen and San, that have been in the area since the late 18th century (Webley, 1997) and thus have an inherent knowledge of the natural environment, i.e. the Valley Bushveld (Acocks, 1988).

METHODOLOGY

A participatory approach to data gathering was selected based on Participatory Rural Appraisal (PRA) principles. PRA can best be defined as an approach and method for learning about rural life and conditions from, with, and by rural people (Chambers, 1994), and a way of interacting with villagers, understanding them and learning from them (Mukherjee, 1993). These methods enable us to unravel the complex interactions between people and plants. PRA methods also assist in overcoming obvious flaws that arise as a result of inappropriate methods and ignorance. For example, traditional extractive methods frequently treat resource users in communities as homogenous groups with the same levels of knowledge despite the fact that specific groups and individuals use available resources in different and various ways that depend on experience, gender, age or specialist knowledge. Such differences are often overlooked and not recorded (Cunningham, 1994). PRA methods provide the means to capture this valuable information by means of recognizing the various perceptions.

Six village communities in the study area were visited and informants included men and women of different social standing, as well as children, in order to involve custodians of different cultural information (Fig.4). The process included informal group discussions with various interest groups as well as interviews with individuals with more specialized knowledge. In most cases an interpreter was em-

ployed (an individual from the group) who acted as a co-facilitator. Information gathered through PRA exercises is summarized in Table 2.

PRA METHODS

1. Transect walks

Transect walks, also known as "walk-in-the-woods interviews" (Alexiades, 1996) involve systematically walking through an area with key informants discussing and recording various aspects of resource use with them. The value of such an exercise to the study was to collect information about local plant use and to collect specimens referred to at the same time. From a botanical perspective it is essential that all information gathered is linked to voucher specimens (Croom, 1983).

Four transect walks were undertaken (Table 2) in three villages. Specimens were collected with detailed information about the uses and preparation of each. Informants for the transect walks were selected from various groups such as men, women, youths and specialists such as traditional healers. On each walk no more than three informants were selected because of the difficulties of recording the information. The transect walks were undertaken through the main collecting and harvesting areas identified by the informants. Informants were encouraged to point out plant species that they recognized and to provide the vernacular names, use and preparation of each, as well as any other information they may have.

A duplicate set of specimens was collected, one set for the PRA exercises performed in the discussion groups and the other set to be pressed and as voucher specimens to be housed in the Selmar Schonland Herbarium at the Albany Museum.

2. Mapping exercise

Two mapping exercises with five participants (Table 2) were undertaken to access information relevant to the source and accessibility of plant resources. Mapping involves the drawing of simple schematic maps by local informants. The groups were provided with large pieces of strong blank paper and felt tipped marker pens in a range of colours. The participants were asked to draw their village in relation to the resource collection points and landmarks such as rivers and mountains. Once the maps were completed discussion amongst the group was

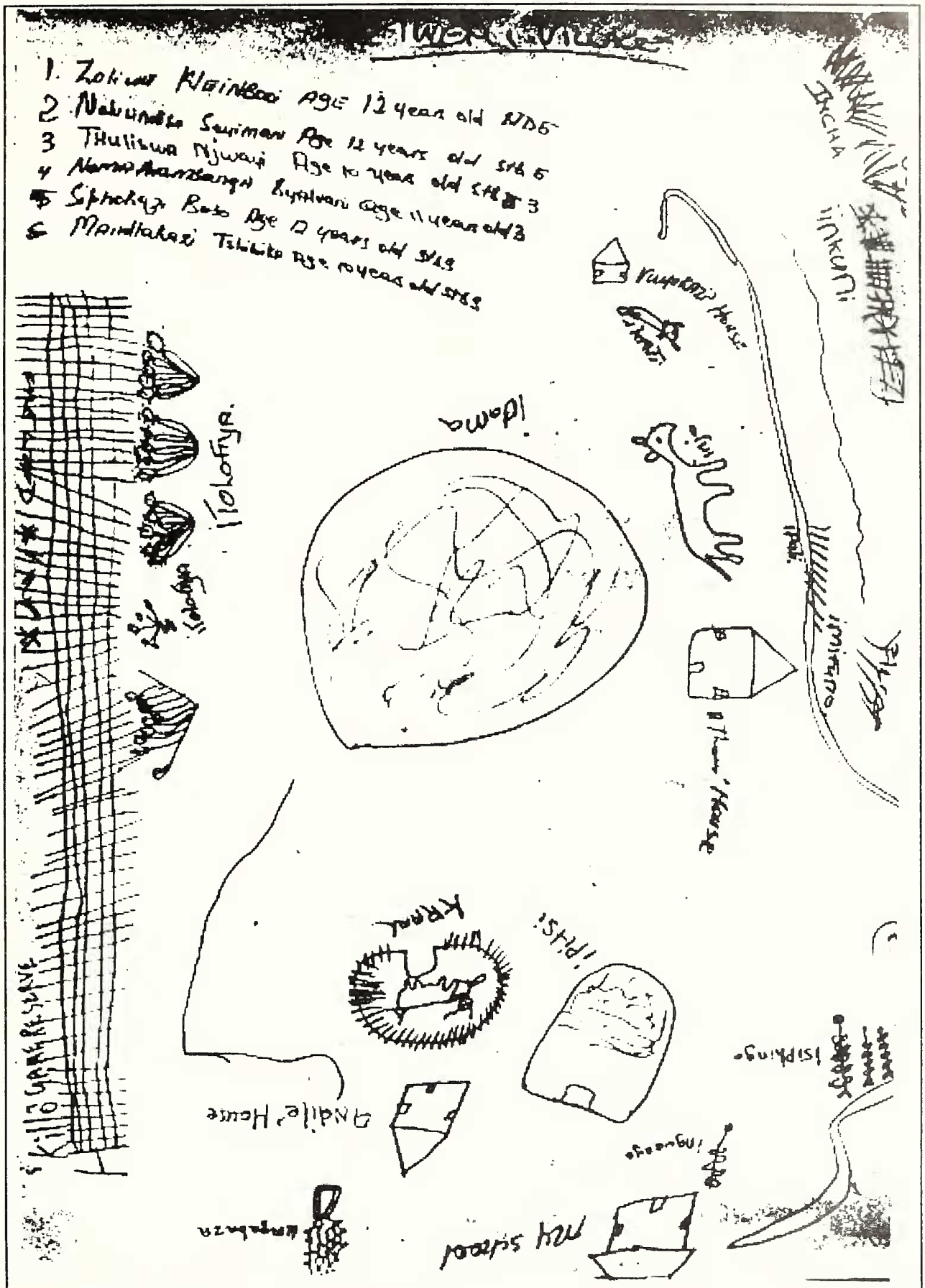


Figure 2. Map drawn by Tweni villagers

encouraged to determine which plants should be drawn on the map and therefore to provide an indication of priority and importance of the plants selected. The positioning of the plant species in relation to the village indicated the distribution and estimated distances covered to collect them, thereby attaching value to each plant.

Mapping exercises were undertaken in two villages, providing information regarding resource localities and abundance. Both exercises revealed that fuel wood and construction material are in great demand and difficult to access. From the example (Fig.2) it was shown that these, and other resources, are perceived to be abundant, but inaccessible, in the reserve (fence indicated by heavy cross hatching on the maps).

3. Informal discussion groups

Three informal discussion groups were undertaken (Table 2) in three villages with 31 informants, resulting in detailed information of 52 plant species. Information gathered in transect walks was verified and added to. During the discussion the duplicate set of plant specimens collected in the transect walks was displayed to prompt the discussion. One specimen was shown at a time and discussed. Participants were encouraged to respond to the following questions:

- ▶ Do they recognise/know the plant, if so by what name do they know it?
- ▶ What do they use it for?
- ▶ How is it used?
- ▶ Who uses it (adults, children, men, women)?
- ▶ How is it prepared?
- ▶ Is it bought or sold?
- ▶ Where is it collected?
- ▶ How plentiful is it?
- ▶ Can something else be used as a substitute? (indicating importance/value)

This technique provided the means to verify previously collected information and to collect further uses of the plants from a large number of people at one time. The results indicated the level of knowledge and the extent and intensity of plant use within the communities.

4. Ranking exercises

Two ranking exercises (Table 2) were undertaken with 10 informants each in two villages. Ranking and scoring exercises reveal priorities

and preferences by allowing informants to physically rank and re-rank specimens and give reasons for doing so (Mukherjee, 1993). Plant species were attributed a status or value by means of ranking representative specimens according to importance, abundance and quantity used.

To conduct the exercise three squares of obviously varying sizes were drawn and each designated a value relative to its size, i.e. most important, less important and least important. The participants were asked to place each specimen (collected previously in the transect walk exercise) into a square, thereby assigning it to that particular category. Reasons for the decision were discussed and recorded for each specimen. Each group was presented with the same plant specimens, to standardize the data source and allow for the accurate interpretation of the results.

Plant species previously identified as important in transect walks and discussion groups were ranked so as to ascertain the most important and most commonly used. The results are summarized in Table 1.

5. Semi-structured interviews

Two semi-structured interviews were undertaken in two villages (Table 2) with seven informants. The advantage of such an interview is that it is based on a partly structured guide but at the same time has the flexibility of an unstructured interview (Alexiades, 1996). This makes it possible to collect comparable, quantitative data while at the same time probing into new areas of interest which might arise in the interview. The interviews were conducted in an informal manner and in a relaxed setting whereby queries emerge from the responses received. The predetermined topics discussed in the interviews related to demand and accessibility of fuel wood, culturally useful plants and medicinal plants.

The results of the interviews revealed very definite cultural use of individual species. Regarding the reserve complex it is clear that access to natural resources is desired by all neighbouring communities.

6. Interviews with key informants

Four key informant interviews were undertaken (Table 2) with nine informants to further clarify two issues: Culturally useful plants and demand and accessibility of fuel wood. The key

Table 1. Plant species most commonly used and designated most important.

Plant species ranked	Most commonly used (in order)	Most important (in order)
<i>Aloe ferox</i> <i>Asparagus africanus</i> <i>Asparagus suaveolens</i> <i>Boscia oleoides</i> <i>Cadaba aphylla</i> <i>Capparis sepiaria</i> <i>Capparis fascicularis</i> <i>Cissampelos capensis</i> <i>Clausena anisata</i> <i>Cotyledon orbiculata</i> <i>Dianthus thunbergii</i> <i>Dioscorea sylvatica</i> <i>Gasteria bicolor</i> <i>Haemanthus albiflos</i> <i>Haworthia attenuata</i> <i>Leucas capensis</i> <i>Olea europaea subsp africana</i> <i>Plumbago auriculata</i> <i>Polygala myrtifolia</i> <i>Polystachya pubescens</i> <i>Ptaeroxylon obliquum</i> <i>Pteronia incana</i> <i>Sansevieria hyacinthoides</i> <i>Solanum nigrum</i>	1. <i>Olea europaea subsp africana</i> (cultural) 2. <i>Ptaeroxylon obliquum</i> (cultural) 3. <i>Gasteria bicolor</i> (cultural & medicinal) 4. <i>Haworthia attenuata</i> (cultural & medicinal) 5. <i>Cissampelos capensis</i> (medicinal)	1. <i>Olea europaea subsp africana</i> (cultural) 2. <i>Ptaeroxylon obliquum</i> (cultural) 3. <i>Plumbago auriculata</i> (cultural) 4. <i>Clausena anisata</i> (medicinal)

informants were interviewed with the explicit aim of recording their particular knowledge and requirements. The key informants were recognized during the group discussions and requested to participate in more detailed individual interviews.

RESULTS

A total number of 83 plants was collected and the plants are listed in Appendix 1. Many of these have multiple uses and the uses, preparation and administration for each have been recorded. Only a single species, *Encephalartos altensteinii* (vulnerable), has a documented conservation status (Hilton-Taylor 1996).

Sixty-one percent of plant species recorded represented medicinal plants (Fig.3) and these are listed in Appendix 1. A host of medicines for minor complaints (22 complaints) were recorded and these, unlike those for more serious problems, often varied from person to person. In discussion groups these were sometimes only known by a single person while another knew a different plant remedy for the same ailment. For more serious problems it was found that according to Xhosa custom the first recourse

to remedy would be to counteract evil, because misfortune is often caused by witchcraft or sorcery. Thirty percent of the medicinal plants recorded are for washing (*iYezalokuhlamba*), spraying (*ukuTshiza*), fumigating (*ukuXhotha*) and steaming (*ukuFutha*) as counteractive and protective medicines. These medicines are used mainly for their psychoactive virtues and are generically known as *iNtelezi* medicines. Current literature often categorises these as magical (Pujol, 1993) or as charms (Soga, 1931; Broster, 1981). In the study site these include *Bulbine latifolia* (*iRooiwater*), *Dianthus thunbergii* (*uBulawu*), *Dioscorea sylvatica* (*iSkorpathi*), *Haworthia attenuata* (*iNtelezi*), *Ledebouria revoluta* (*iKreketsane*), *Plumbago auriculata* (*iChinchini*), *Schotia latifolia* (*uMaphipha*) and *Gasteria bicolor* (*iNtelezi*).

Various preparation methods and methods of application of medicines were recorded. Forty-five percent of the total number of preparations were infusions in hot or cold water taken orally, 14% used as an enema, 14% as a body wash, 12% as an emetic and the remaining 15% snuffs, ear drops, poultices, douches, gargles and lozenges. Medicine to purge or clean the

Table 2: Summary of information collected from the PRA exercises

Village	Transect walk	Mapping exercise	Informal discussion group	Ranking exercise	Semi-structured interview	Key informant interview
Nomtayi	1 informant: 21 spp. collected	15 informants: medicinal & food plants commonly collected around village; fuel and construction materials uncommon, collected at great distances from within reserve.	17 informants : 20 spp. recorded for personal use.		5 informants: fuel wood scarce, collected opportunistically without sp. selection; thatching grass not favoured; commercial building poles purchased	1 informant: Harvests fuel wood and food spp. for family in Peddie.
Ripplemead					2 informants: 1 cultural sp; 1 medicinal sp.	6 informants: 3 spp. of cultural (spiritual) importance. 1 informant: harvesting and trading at national level.
Double Drift			7 informants; 21 spp. harvested for personal use & trade.			
Tweni	1 informant: 38 spp. collected. 2 informants: 18 spp. collected	15 informants: fuel wood rare, supplemented with cow dung.	7 informants: 12 spp. for personal use.			
Ndwayana				5 informants: 22 spp., 2 spp. critical, 9 spp. very important.		
Gwabeni	2 informants: 27 spp. collected					
Fort Montgomery						1 informant: cultural artifact (raintree)
Glenmore				5 informants: 22 spp.; 2 critical, 12 important.		

body is a common health practice among Africans and it has been well recorded in the literature (Pujol, 1993, Leclerc-Madlala, 1994). They are either used routinely as a type of preventive health measure or with the onset of any symptoms of illness. The African world view is that illness is commonly attributed to either natural or supernatural causes with the idea of "contamination" entering from both the physical and the spiritual plane. It is believed that a cure or relief is only to be found through purging and cleansing the body. Therefore purging in all its forms is usually the first course of action in the quest for a cure for any and all

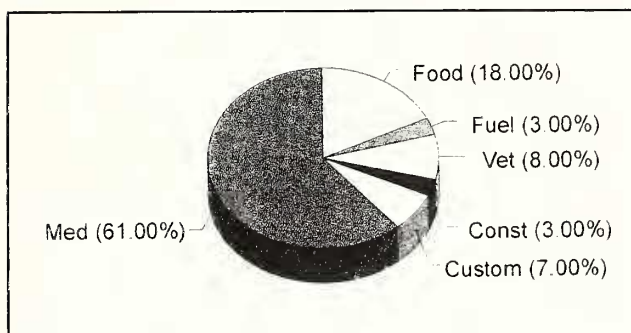


Figure 3. Plant use categories

illness (Leclerc-Madlala, 1994). Plant species recorded more than once for purging are *Aloe ferox* (iKhala), *Bulbine frutescens* (iYakayakana), *Cissampelos capensis* (uMayisake), *Dianthus thunbergii* (uBulawu), *Dioscorea sylvatica* (iSkorpathi), *Haemanthus albiflos* (uMaweni), *Haworthia attenuata* (iNtelezi), *Kedrostis foetidissima* (iThuvish), *Polygala myrtifolia* (uMabalabala), *Sansevieria thyrsiflora* (iSkolokoto), *Solanum incanum* (uMathuma) and *Urginea altissima* (uZabokwe).

Seven percent of plant species recorded were used for Xhosa customs and rituals (Fig.3). The two most important and commonly used plants in the study area are *Olea europaea* subsp. *africana* (uMnquma) and *Ptaeroxylon obliquum* (uMthathi). Both are used in ceremonies where animals are ritually slaughtered, the meat is then laid out using a bed of leaves and branches as a large plate (Dold & Cocks, 1999). *Dianthus thunbergii* (uBulawu) is used to produce foam in water (saponin) for ritual purposes. Both *Plumbago auriculata* (iChinchin) and *Carissa bispinosa* (iNcumncum) are used to make ritual staffs by diviners. *Cadaba aphylla* (iStorom) is planted around the home to ward off lightning and evil spirits. A pair of *Euphorbia*

triangularis (uMhlontlo) seedlings are customarily planted near the entrance to a homestead when twins are born. *Clausena anisata* (iPerepes) and *Boscia oleoides* (iVetrhathi) are burnt and the smoke is blown around a new born baby as an incense to ward off evil spirits at this vulnerable time. *Haworthia attenuata* (iNtelezi) is planted around the home to intercept evil spirits and protect it from lightning.

A site specific cultural tree, *Sideroxylon inerme* (uMqwashu), was visited and its use documented. As far as we have been able to ascertain this "Rain Tree" that is called upon to evoke rain in times of drought, has not been previously documented. Appendix 2 provides details in the form of a case study.

Food plants accounted for 18% of plants recorded (Fig.3). Fruits are only occasionally eaten and not collected as a staple food. The following fruits are eaten: *Capparis fascicularis* (iNtshila), *Carissa bispinosa* (iNcumncum), *Ehretia rigida* (uMhlehi), *Grewia occidentalis* (iNqabaza), *Harpephyllum caffrum* (iNgwenye), *Pappea capensis* (iLitye) and *Scutia myrtina* (iSipingo). The leaves of *Portulacaria afra* (iGwanishe) and the tap root of *Gazania krebsiana* (iNongwe) are occasionally eaten as a thirst quencher or snack. Wild vegetables, indigenous and exotic ruderals, are collected regularly as a supplement to the staple diet of maize and are known generically as iMifino plants. Woman and young girls collect the leaves of *Solanum nigrum* (iSobosobo), *Sonchus asper* (iHlaba), *Marrubium vulgare* (iMbuya), *Arctotis arctotoides* (iSkwamba) and *Taraxacum officinale* (iHlaba) daily. The dietary value of iMifino plants are documented by Rose & Jacot Guillarmod (1974) and Mbangata *et al.* (1984). Plants seldom eaten but known to be used in drought periods as a source of water are *Cussonia spicata* (uMsenge) and *Cotyledon orbiculata* (iSundu). The fruit of the invader plant *Opuntia ficus-indica* (iTolofiya) is collected in season both as a food supplement and to be sold to passing travellers. This activity is well documented by Brutsch & Zimmermann (1993).

In a traditionally pastoral culture it is not surprising that 8% of plant use records are for veterinary medicines. *Haemanthus albiflos* (uMathunga), *Asparagus* sp. (uMathunga) and *Acacia karroo* (uMnga) are used in poultice form to heal broken limbs of goats and cattle. An infusion of *Azima tetraantha* in cold water (iGcegceleya) is given to animals experiencing delivery problems and *Sarcostemma viminale*

(uMbelebele) is dried, powdered and given to animals to encourage lactation. *Secamone filiformis* (uMbijela) and *Arctotis arctoides* (uBhushwa) are given to animals suffering from a disease that causes weakness and grogginess. *Aloe ferox* (iKhala) leaves are boiled in water and the liquid added to cattle drinking water to prevent redwater disease, the same is added to poultry drinking water to prevent poultry disease.

Poles used for the construction of dwellings and cattle kraals are scarce and the main criteria for their selection are size and straightness. In the study site species used include *Combretum caffrum* (iDube) for huts and *Acacia karroo* (uMnga) for kraals. Commercially grown poles are bought in Alice and King William's Town. The construction of a traditional Xhosa hut is documented by Johnson (1982). Live kraal fences are often cultivated from cuttings of *Portulacaria afra* (iGwanishe). *Rhoicissus digitata* (uMqceba) is used for rope.

It has been documented by Briers and Powell (1996) that *Euclea undulata* is selected by commercial collectors in the Valley Bushveld but that wood selected for private use is collected less selectively. Villages in the study site are not supplied with electricity and are reliant on fuel wood although this is often scarce and supplemented with dried cow dung collected by children. Fuel wood is collected opportunistically by woman and young girls where available without regard to specific species selection, however, *Acacia karroo* (uMnga) and *Putterlickia pyracantha* (uMqha-qoba) are reported to be good fuel woods. *Ptaeroxylon obliquum* (uMthathi) is used as a firelighter. Fuel wood accounts for the largest mass of plant material taken from the study site.

Exotic plants that have been introduced and naturalised are very often used not only as amaYeza but also as iMifino, a generic term for wild vegetables. Eleven useful exotic plant species were recorded. Food plants include *Opuntia ficus-indica* (iTolofiya), *Solanum nigrum* (iSobosobo), *Sonchus asper* (iHlaba) and *Taraxacum officinale* (iHlaba). The use and value of these in the former Transkei is discussed by Mbangata *et al.* (1984). The fruit of *Solanum incanum* (uMathuma) is pulped and applied to ringworm and an infusion of the root is used to treat kidney pain. An infusion of the leaves of *Schinus molle* (iPepile) is taken for influenza and fever. *Nicotiana glauca* (iCubamfene) leaves are

heated and applied as a poultice to boils. A cold infusion of the bark of *Catharanthus roseus* (iFlawa) is taken to treat diabetes (iSwekile). Sap of *Ruta graveolens* (iVentrit) is added to milk and given to infants with wind. An infusion of the leaves of *Malva parviflora* (iJongilanga) is used as a gargle to treat toothache. Small pieces of fresh bark of *Withania somnifera* (uBuvimba) are chewed raw to treat chronic coughing.

All of the major contributors except one, a trained diviner, had learnt amaYeza¹ use from an elder in the family. This information is not written down but passed on from one generation to the next by way of experience. The diviner had accessed her knowledge from her ancestors by way of dreams. It is encouraging to have seen that many young people, particularly girls, have in turn learnt amaYeza esiXhosa (Xhosa medicine) from their elders. Xhosa customs (amaSiko esiXhosa) are still strongly adhered to in the study site by young people although these have been adapted and changed with the times and are often very different from iQobo lesiko lesiXhosa (strongly traditional).

Methods of plant identification proved to be unconventional and innovative. In contrast to using comparative methods collectors used a combination of the senses. The process involves sight, touch, smell, and taste. *Cassine papillosa* (uMbomvana) was identified by slashing the bark to reveal a deep yellow under surface, *iThuvish* (*Kedrostis foetidum*) was smelt and as the name implies has a repulsive smell, and uMqeba (*Brachylaena illicifolia*) was recognised by its bitter, astringent taste. Names of plants very often stem from usage (Dold & Cocks, in press). For example, *iYezalamasi* (*Senecio coronatus*) means "medicine of milk" and is used in weaning a child from its mother's milk, and *iYeza-lokuhlamba*, means "medicine for wash-ing" (many species) and is used as a body wash to ensure good fortune and eliminate evil. *Haemanthus albiflos* is known as uMathunga, meaning "to sew", and is used to speed up the healing of broken bones. Names also originate from the appearance of the plant such as *iSibindi*, (*Pycnoporus cinnabarinus*), meaning

¹ It should be noted that the word *iyeza* not only encompasses curative and preventative medicine for bodily ailments but includes substances used in *amasiko*, meaning culturally related customs and rituals.

“liver”. This is a dull red bracket fungus that looks remarkably like liver. Another example is *iSkolpati*, from the Afrikaans *skilpad* meaning tortoise, *Dioscorea sylvatica*, which has a tuber that closely resembles a tortoise on the ground. The name *iJongilanga*, meaning “looking at the sun”, applies to *Malva parviflora* owing to its perceived habit of the leaves following the path of the sun.

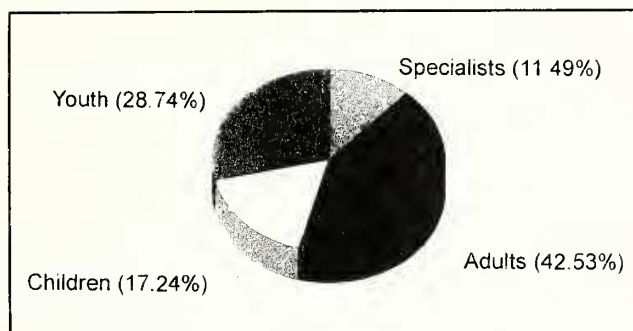


Figure 4. Informant categories

Several plants have some resemblance to some ‘portion’ of the body and through association are used as healing agents for those affected parts. This is referred to as the “Doctrine of Signatures” (Pujol, 1993) and is well documented in Europe. In the study area examples include: *Acacia karroo* - the red inner bark is used to treat bloody stools; *Catharanthus roseus* - the red inner bark is used to treat diabetes; *Pelargonium reniforme* - the bright red fleshy root is used to treat bloody stools. *Sarcostemma viminalis* - the stems with copious milky latex are used to encourage lactation in cows.

Mapping exercises showed that villagers perceived the reserve complex to be a large untapped although inaccessible source of natural resources. Female informants prioritised fuel wood and construction materials whereas male informants prioritised grazing and browsing for their stock as the most sought after resources from within the reserve complex. The recently established (1995) Inxuba Conservation and Economic Forum (ICEF),

representing all villages neighbouring the reserve complex, is negotiating with reserve authorities regarding possible controlled access to reserve resources (Cocks & Timmermans, 1999).

CONCLUSION

It is clear from this study that medicinal plants, food plants and plants used for culturally related purposes are widely known and regularly used by communities in the study area (Fig.4). These are collected by the users themselves and the level of botanical knowledge at the household level is far greater than has been previously attributed in relevant literature (Cocks, 1997). Eighty percent of plants recorded had their names and uses confirmed two or three times by different informants. Contrary to expectations it is not only *amaQhaba*, (traditionalists) who use these plants but people from all age groups, religious affiliations, and levels of education. Users ranged from teenagers to old-age pensioners, from rural subsistence farmers to wealthy urban businessmen.

Eighty-three plant species with uses, preparations and vernacular names are listed together with their perceived abundance and accessibility. *Olea europaea* subsp. *africana* is ranked as the most important plant, followed by *Ptaeroxylon obliquum*. Both species are used regularly for cultural practices at a household level in the study site. The most commonly used plants are *Olea europaea* subsp. *africana*, *Ptaeroxylon obliquum*, *Gasteria bicolor*, *Haworthia attenuata* and *Cissampelos capensis*. Regarding restricted reserve land, it is clear from this study that neighbouring communities desire access to resources, particularly stock range-land and fuel wood.

ACKNOWLEDGEMENTS

Thanks to Ben-Eric van Wyk and Hilde van Vlaenderen for advice and to Robert de Jongh, National Cultural History Museum, for funding part of the fieldwork.

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APPENDIX 1: TABLE OF AMAYEZA PLANTS AND USES

No.	Informant category	Botanical and vernacular name, voucher specimen	Use and preparation	Location and perceived abundance
1	Group discussion Nomtayi	<i>Polygala myrtifolia</i> L. - uMabalabala Dold 1673	Soft bark scraped from branches, boiled and taken for headaches. Used as an emetic (ukugabha), to cleanse body of evil spirits (Some women felt that it was too strong for children).	Collected in the Valley Bushveld; common.
	Key informant Nomtayi	<i>P. myrtifolia</i> L. uMabalabala	as above	as above
	Women's group Nomtayi	<i>vP. myrtifolia</i> L. uMabalabala	as above	as above
	Specialist Tweni	<i>P. myrtifolia</i> L. uMabalabala	as above	Collected in nearby veld.
	Key informant Tweni	<i>P. myrtifolia</i> L. uMabalabala	Used to cleanse the kidneys. The bark is scraped off and boiled in water. It is taken as an enema and is suitable for all ages and both men and women.	Common; collected in nearby veld.
	Specialist Gwabeni	<i>P. myrtifolia</i> L. uMabalabala	as above	Collected from the outskirts of the village; common.

2	Group discussion Nomtayi	<i>Cissampelos capensis</i> L.f. uMayisake Dold 1678, 1712	For stomach ache, bark mixed with water and two teaspoons taken at a time, all ages. Taken for poison in the stomach, 3 spoonfuls a day.	Collected on the outskirts of the village; common.
	Specialist Tweni	<i>C. capensis</i> L.f. uMayisake	Taken as an emetic or an enema for high temperature, (igazi elishushu) The root is also used for stomach aches. Mixed with <i>Pteronia incana</i> and <i>Clausena anisata</i> .	as above
	Key informant Tweni	<i>C. capensis</i> L.f. uMayisake	Taken for stomach aches. The roots are infused in cold water and taken as an enema. The roots can also be used to prevent wind.	as above
	Child (scholar) Ndayana	<i>C. capensis</i> L.f. uMayisake	Taken for stomach ache.	Collected by parents.
3	Group discussion Nomtayi	<i>Artemisia afra</i> Jacq. ex Willd. uMhlonyana.	For fever, boiled in water, taken as a tea.	Not found at Nomtayi; from near Alice; rare.
	Game guards	<i>A. afra</i> Jacq. ex Willd.- uMhlonyana	As above: infusion for ear-ache (indlebe eqaqambayo) applied as drops.	Cultivated in garden.
4	Group discussion Nomtayi	<i>Brachyleana ilicifolia</i> (Lam.) Phill. & Schweick. uMqheba. Dold 1504	For sore throats and coughs. Can be chewed, boiled in water and drunk, or dry leaves can be crushed and snuffed.	Common in Valley Bushveld.
	Key informant Nomtayi	<i>B. ilicifolia</i> (Lam.) Phill. & Schweick uMqheba.	as above	Common in Valley Bushveld.
	Key informant Tweni	<i>B. ilicifolia</i> (Lam.) Phill. & Schweick uMqheba.	Taken for coughs. The leaves are boiled in water and 1 tsp. taken when needed. Bitter taste.	as above
5	Group discussion Nomtayi	<i>Cissampelos capensis</i> L.f. iDabulitye. Dold 1678	For stomach pains, root mixed with cold water and drunk.	Collected from distant forests.
6	Group discussion Nomtayi	<i>Becium burchellianum</i> (Benth.) N.E. Br. uBhubhusi Cocks 16	For fever, bark boiled in water and drunk, all ages.	Common around the village.
7	Group discussion Nomtayi	<i>Haemanthus albiflos</i> Jacq. - uMathunga.	For healing broken bones, the bulb is soaked in cold water and then drunk.	Scarce but found around the village.
	Game guards.	<i>H. albiflos</i> Jacq. uMathunga.	Root is used as a poultice and drunk to heal broken bones.	Occasional in valley bushveld.

8	Group discussion Nomtayi	<i>Bulbine frutescens</i> (L.) Willd. iYakayakana. Dold 1510	Used for pain in lower abdomen by women, mothers only. Related to childbirth, is boiled in water and drunk.	Collected from the forest far away; common.
	Key informant Nomtayi	<i>B. frutescens</i> (L.) Willd. iYakayakana	as above	as above
	Women's group Nomtayi	<i>B. frutescens</i> (L.) Willd. iYakayakana	Taken for period pain & especially to cleanse the body. It is mixed with rooi-water (53) and boiled in water and drunk.	Common in village.
	Specialist Tweni	<i>B. frutescens</i> (L.) Willd. - iYakayakana	Used as an enema for stomach poison (witchcraft implied) all ages.	Collected on the outskirts of the village.
9	Group discussion Nomtayi	<i>Haworthia attenuata</i> Haw. - iNtelezi.	For "bad stomach"(upset stomach), used as a purgative, boiled in water and drunk.	Common in Valley Bushveld, far away.
	Women's Group Nomtayi	<i>H. attenuata</i> Haw. iNtelezi	Used as a wash for itchy body and rashes, (iqhakuva). It is pulped and steeped in cold water.	Collected from surrounding veld; uncommon.
	Key informant Nomtayi	<i>H. attenuata</i> Haw. iNtelezi	Used as a wash against bad luck or evil spirits.	Cultivated in garden.
	Key informant Tweni	<i>H. attenuata</i> Haw. iNtelezi	Used as a wash to ward off evil spirits. The skin burns when applied so the pulp is diluted in water. Also used as a wash, it can also be used to ward off lightning from the home by planting it in the garden. Also for protection against misfortune such as car accidents.	as above
	Child (scholar) Ndwayana	<i>H. attenuata</i> Haw. iNtelezi	Used as a wash for protection and good luck in exams.	Collected by parents.
10	Group discussion Nomtayi	<i>Opuntia ficus-indica</i> (L.) Mill. - iTolofiya. Dold 3959	Eaten as a fruit. Collected for sale on the roadside. Fresh leaves used as a poultice to sooth fungal infection.	Scarce around the village, common in reserve.
	Game guards Reserve	<i>O. ficus-indica</i> (L.) Mill. - iTolofiya	as above	Collected from the reserve and taken home to the villages.

11	Group discussion Nomtayi	<i>Solanum nigrum</i> L. uMsobosobo Cocks 11	Vegetable collected in the rainy season by women. Cooked with mealie-meal and mealie rice.	Common during summer.
	Women's group Nomtayi	<i>S. nigrum</i> L. uMsobosobo	Eaten to relieve dryness/thirst. The bark is peeled off and eaten.	Village weed.
	Game guards	<i>S. nigrum</i> L. uMsobosobo	The fruit is eaten and the leaves are cooked as a vegetable supplement.	Roadside weed.
	Specialist Gwabeni	<i>S. nigrum</i> L. iMfino	The leaves are cooked and eaten with mealie rice, onions and fat.	Village weed.
12	Group discussion Nomtayi	<i>Cussonia spicata</i> Thunb. - uMsenge Dold 1709	The root is dug up and eaten to get liquid in drought. Reported to be used by traditional healers as an ingredient in cancer treatment.	In the forest and veld.
13	Group discussion Nomtayi	<i>Harpephyllum caffrum</i> Bernh. ex Krauss - iNgwenye	Fruit eaten while walking in the veld as a snack.	Common
14	Group discussion Nomtayi	<i>Grewia occidentalis</i> L. - iNqabaza Dold 1917	Can be eaten as a fruit, but very bitter.	Common
15	Group discussion Nomtayi.	<i>Pappea capensis</i> Eckl. & Zeyh. iLitye Dold 2265a	Fruit is eaten, locally referred to as "chappies" (snack food).	Common
	Women's group Nomtayi	<i>P. capensis</i> Eckl. & Zeyh. - iLitye	as above	Common
16	Group discussion Nomtayi	<i>Carissa bispinosa</i> (L.) Desf. ex Brenan iNcumncum Dold 1757	Berry eaten as a fruit. Forked stick from branch used as a whisk by diviners.	Common
17	Group discussion Nomtayi.	<i>Azima tetraacantha</i> Lam. - iGcegeleya Cocks 6	Wood is avoided as fuel because the smoke is poisonous.	Common
	Key informant Nomtayi	<i>A. tetraacantha</i> Lam. iGcegeleya	Roots bottled in cold water and given orally to goats experiencing delivery problems.	Common
	Women's group	<i>A. tetraacantha</i> Lam. iGcegeleya	The juice of the berries is used for ear ache, applied fresh, 2 drops directly into the ear.	Common

18	Group discussion Nomtayi	<i>Acacia karroo</i> Hayne - uMnga Cocks 4	Good firewood & coals.	Very common Collected on the outskirts of the village. as above as above
	Key informant Nomtayi	<i>A. karroo</i> Hayne uMnga	Good firewood & coals	
	Women's group Nomtayi	<i>A. karroo</i> Hayne uMnga	Taken for cleansing the blood: the bark is peeled off and steeped in hot water like a tea and drunk. Suitable for both adults and children. Is also good fuel.	
	Specialist Tweni	<i>A. karroo</i> Hayne uMnga	Softened bark is used as a bandage to heal broken bones in livestock.	
	Specialist Gwabeni	<i>A. karroo</i> Hayne uMnga	Pieces of the fresh bark are chewed to relieve stomach ache and bloody stools.	
19	Group discussion Nomtayi	<i>Olea europaea</i> L. subsp. <i>africana</i> (Mill.) P S Green uMnquma	Xhosa customs. The branches are used as a platter to serve meat from ceremonially slaughtered animals .	Common around village.
20	Group discussion Nomtayi	<i>Dianthus thunbergii</i> Hooper - uBulawu Dold 1719	Used to make foam that is drunk or rubbed onto the face for ritual customs. The root and leaves are soaked in a tin of water then a forked stick (16, 29) is rubbed between the palms to make foam (igwebu).	Uncommon on high ridges (eThafeni).
	Game guards	<i>D. thunbergii</i> Hooper	Emetic for good fortune (ukuhlamaba amashwa).	Collected in the reserve.
21	Key informant Nomtayi	<i>Sansevieria hyacinthoides</i> (L.) Druce - isKolokoto	Boiled mixture drunk as an emetic to expel phlegm (uxakaxa).	Commonly found in the forest.
	Women's group Nomtayi	<i>S. hyacinthoides</i> (L.) Druce isKolokoto	Used for ear-ache in both adults and children. The leaves are heated in the fire and the juice is squeezed into a teaspoon and poured into the ear.	Collected in the veld.
	Key informant Tweni	<i>S. hyacinthoides</i> (L.) Druce isKolokoto	Leaves are warmed in the fire, the juice is then squeezed directly into the ear for ear-ache.	as above
22	Key informant Nomtayi	<i>Cussonia spicata</i> Thunb. uMsenge Dold 1741	Liquid from tuber taken orally to cleanse the blood.	Common near village.
	Women's group Nomtayi	<i>C. spicata</i> Thunb. uMsenge	as above	as above
	Specialist Tweni	<i>C. spicata</i> Thunb. - uMsenge	Root eaten, the flesh is chewed and spat out for moisture only.	as above

23	Key informant Nomtayi	<i>Clausena anisata</i> (Willd.) Hook. f. ex Benth. - iPerepes Dold 1689	Boiled and taken as a tea for coughing (ukukhohlela).	Common
24	Key informant Nomtayi	<i>Olea europaea</i> L. subsp. <i>africana</i> (Mill.) P S Green uMnquma	Used as a plate/platter, for ceremonially slaughtered meat.	Very common
25	Key Informant Nomtayi	<i>Ptaeroxylon</i> <i>obliquum</i> (Thunb.) Radlk. - uMthathi Dold 1820	Mixed with <i>Olea</i> (24) and used to serve ceremonially slaughtered meat.	Common in Valley Bushveld.
	Women's group Nomtayi	<i>P. obliquum</i> (Thunb.) Radlk. - uMthathi	Fresh branches good firelighters, as good as paraffin.	as above
	Specialist Tweni	<i>P. obliquum</i> (Thunb.) Radlk. - uMthathi	The leafy branches are used as a platter for the meat of sacrificed animals.	Collected on the outskirts of the village.
26	Specialist Gwabeni	<i>P. obliquum</i> (Thunb.) Radlk. - uMthathi	The fresh bark is steeped in cold water and 2 spoons of the infusion taken 3 times a day for iswekile (diabetes). This can be mixed with an infusion of umgqeba bark, <i>Brachyleana ilicifolia</i> , for the same remedy.	
	Key informant Nomtayi	<i>Scutia myrtina</i> (Burm.f.) Kurz iSipingo.	Berries eaten as a snack in the veld.	Common
	Women's group Nomtayi	<i>S. myrtina</i> (Burm.f.) Kurz - iSipingo.	Eaten as a snack in the bush. Not collected as a staple.	Common
	Game guards	<i>S. myrtina</i> (Burm.f.) Kurz - iSipingo	The fruit is eaten as a snack.	Common
27	Key informant Nomtayi	<i>Aloe ferox</i> Mill. iKhala Dold 1696	Dry leaves are powdered and boiled for an enema for kidney problems.	Common
	Women's group Nomtayi	<i>A. ferox</i> Mill. iKhala	Sap is mixed in hot water & taken orally or as an enema to cleanse the body. Suitable for both adults and children. Also said to be used to protect infants from evil spirits: fresh sap is mixed with vaseline and smeared over the newborn infant daily for 6 months.	Common

27	Game guards	<i>A. ferox</i> Mill. iKhala	Dry leaves are boiled and used as an emetic to cleanse the stomach and for kidney ailments. Green leaves are put into chicken's drinking water to prevent them contracting poultry disease. The leaves are boiled and mixed in the cattle drinking water to prevent Redwater disease.	Common
28	Key informant Nomtayi	<i>Gazania krebsiana</i> Less. - iNongwe	Root eaten raw by children as a snack.	Occasional in open grass-land.
	Women's group Nomtayi	<i>G. krebsiana</i> Less. iNongwe	Root eaten as a snack by children. Not collected by households as a food supplement.	
29	Key informant Nomtayi	<i>Carissa bispinosa</i> (L.) Desf. ex Brenan iNcumncum Dold 1757	Fruit eaten as a snack.	Occasional in grassland.
	Women's group Nomtayi	<i>C. bispinosa</i> (L.) Desf. ex Brenan iNcumncum	Fruit eaten as a snack.	
	Game guards.	<i>C. bispinosa</i> (L.) Desf. ex Brenan iNcumncum	Used to cut "ixhayi" the forked stick used as a whisk to make foam (80).	Collected on the outskirts of the village.
	Specialist Tweni	<i>C. bispinosa</i> (L.) Desf. ex Brenan iNcumncum	Fruit eaten as a snack.	
30	Key informant Nomtayi	<i>Solanum incanum</i> L. - uMathuma	Berries crushed and applied to ring-worm. Root is boiled and used as an enema for kidney problems.	Common weed in village.
	Women's group Nomtayi	<i>S. incanum</i> L. uMathuma	as above	as above
31	Key informant Nomtayi	<i>Taraxacum officinale</i> Weber <i>sensu lato</i> iHlaba	Eaten as a vegetable, boiled or fried in fat.	Common in disturbed places.
32	Key informant Nomtayi	<i>Haemanthus albiflos</i> Jacq. - uMathunga	The bulb is chopped up and boiled, 2 teaspoons are taken before meals to speed up the healing of broken bones.	Commonly found and found in the reserve
	Women's group Nomtayi	<i>H. albiflos</i> Jacq. uMathunga	Used to heal broken bones in both humans and livestock. The bulb is chopped and bandaged onto the limb or it can be steeped in water and drunk as a tea.	

33	Key informant Nomtayi	<i>Cissampelos capensis</i> L.f. iDabulitye Dold 1678	Root is boiled and drunk as a tonic, all sexes and ages.	Collected from the forest; plentiful.
	Women's group Nomtayi	<i>C. capensis</i> L.f. iDabulitye	Root infusion taken for stomach aches.	Also found in the reserve, but scarce.
34	Women's group Nomtayi	<i>Olea europaea</i> L. subsp. <i>africana</i> (Mill.) P S Green uMnquma	One women said that it was good for treating stomach aches. Also used for ritual purposes, as serving platter for sacrificed meat.	Common and easily found.
	Game guards	<i>O. europaea</i> L. subsp. <i>africana</i> (Mill.) P S Green uMnquma	Together with uMthathi, <i>Ptaeroxylon obliquum</i> (25) the branches are used as a platter for ceremonial meat.	Collected from the reserve, also collected to take home.
35	Women's group Nomtayi	<i>Clausena anisata</i> (Willd.) Hook. f. ex Benth. - iPerepesi Dold 1742	Taken for fevers. The leaves are crushed and soaked in warm water and drunk. Mixed with <i>Pappea capensis</i> and boiled as a tea for children when they have coughs.	Very common
	Game guards	<i>C. anisata</i> (Willd.) Hook. f. ex Benth. iPerepesi	The leaves are boiled and a tea drunk for coughing.	Collected from the reserve.
	Women's group Glenmore	<i>C. anisata</i> (Willd.) Hook. f. ex Benth. iPerepesi	Used to ward off the evil spirits from new born babies. It is burnt (ukushiza) in the house.	
36	Women's group Nomtayi	<i>Brachyleana ilicifolia</i> (Lam.) Phill. & Schweick. uMqheba Dold 1504	Taken for coughs. Suitable for both adults and children. The leaves are soaked in boiling water or the leaves can be chewed.	Collected on the outskirts of the village.
	Game guards	<i>B. ilicifolia</i> (Lam.) Phill. & Schweick. uMqheba	Leaf infusion to cure coughs and stomach ache.	as above
	Specialist Tweni	<i>B. ilicifolia</i> (Lam.) Phill. & Schweick. uMqheba	Used for coughs, leaves eaten raw or boiled as a tea.	as above
37	Women's group Nomtayi	<i>Leucas capensis</i> (Benth.) Engl. iPhiphiyo	Taken for head aches. The leaves are crushed and taken as a snuff.	
	Game guards	<i>L. capensis</i> (Benth.) Engl. - iPhiphiyo	The leaves are made damp and drops are squeezed into the nose for fever.	Collected on the outskirts of the village.

37	Specialist Tweni	<i>L. capensis</i> (Benth.) Engl. - iPhiphiyo	The juice of the leaves squeezed into nostrils to relieve headaches.	Collected from the veld.
	Key informant Tweni	<i>L. capensis</i> (Benth.) Engl. - iPhiphiyo	The leaves are squeezed and the sap is dropped into the nose and ears as a cure for fever.	
38	Women's group Nomtayi	<i>Exomis microphylla</i> (Thunb.) Aell. uMvenyathi Cocks 7	Taken to clear infant's phlem. The roots are cleaned, boiled in water and poured into a baby bottle for infants to drink.	
39	Women's group Nomtayi	<i>Sonchus asper</i> (L.) Hill - iHlaba	Eaten as imifino (wild vegetable).	Common weed found around the village.
	Women's group Ndwayana	<i>S. asper</i> (L.) Hill iHlaba	Eaten as imifino. To prepare it, it is firstly washed, the stems are then cut off and the leaves are boiled and added to mealie meal or mealie rice.	
40	Game guards	<i>Senecio deltoideus</i> Less. - iTyolo	Used for pimples and skin complaints.	Common in the village.
4 i	Game guards.	<i>Capparis sepriaria</i> L. iNtshilo Dold 1721, 1695	The wood is burnt and the smoke inhaled to chase away evil spirits (ukugxota into imdaka).	Common
42	Game guards	<i>Cussonia spicata</i> Thunb. - uMsenge Dold 1741	Roots are used as a food supplement in drought times.	Common
43	Game guards	<i>Schinus molle</i> L. iPepile Dold 3942	The leafy branches are used to keep flies away. Leaves boiled and taken for flu and fever.	Uncommon; cultivated.
44	Game guards	<i>Grewia occidentalis</i> L. - uMnqabaza	The fruit is eaten as a snack.	Common Collected on the outskirts of the village.
	Specialist Tweni	<i>G. occidentalis</i> L. uMnqabaza	Fruits eaten occasionally.	
45	Game guards	<i>Pappea capensis</i> Eckl. & Zeyh. iLitye	Fruit eaten as a snack.	Collected on the outskirts of the village.
	Specialist Tweni	<i>P. capensis</i> Eckl. & Zeyh. - iLitye	Fruits eaten.	
46	Individuals Ripplemead	<i>Euphorbia triangularis</i> Desf. uMhlontlo Cocks 28	The sap is mixed weakly with water and used as a wash for newly born twins to ensure their strength. Two seedlings customarily planted near homestead when twins are born. Stolen cow can be washed with sap to change the colour of its coat so as to avoid detection in stock theft.	Common

47	Individual Ripplemead	<i>Aloe ferox</i> Mill. iKhala. Dold 1696	The sap is put on a mother's nipple to stop a child from breastfeeding during weaning.	In village.
	Specialist Tweni	<i>A. ferox</i> Mill. iKhala.	Dried leaves boiled and liquid used for enema to cleanse the stomach.	Collected on the outskirts of the village.
	Key informant Tweni	<i>A. ferox</i> Mill. iKhala.	Taken to cleanse the stomach and kidneys. The sap from the leaves is boiled in water and used as an enema.	Collected in the veld.
48	Specialist Tweni	<i>Schotia latifolia</i> Jacq. - uMaphipha Dold 1754	Leaf & bark infusion used as a wash and taken as a tea to cleanse the blood. Strong infusion drunk to expel afterbirth in troubled delivery.	Common
49	Specialist Tweni	<i>Dioscorea sylvatica</i> (Kunth.) Eckl. iSkorpathi Cocks 5	Tuber infusion taken to induce vomiting and used as a wash for body rashes.	Rare
50	Specialist Tweni	<i>Ziziphus mucronata</i> Willd. - uMphafa Dold 17111	A concoction is drunk and used as a douche for thrush (fungal infection).	Common
51	Specialist Tweni	<i>Encephalartos altensteinii</i> Lehm. uMphanga	Stem/root infusion mixed with uMphafa (50) to treat thrush. The mixture is also taken to treat infertility in woman.	Uncommon
52	Specialist Tweni	<i>Boscia oleoides</i> (Burch. ex DC.) Toelken - iVetrhathi Dold 1669	Burnt wood smoke is used to drive away evil spirits.	Common
53	Specialist Tweni	<i>Bulbine latifolia</i> (L.f.) Roem. & Schult. iRooiwater. Dold 1509	Leaf pulp used either as a wash or an infusion drunk for body rashes (amaqhakuva).	Common
54	Specialist Tweni	<i>Dianthus thunbergii</i> Hooper iNkomoyentaba Dold 1719	It is drunk for the custom, uXhela Inkomo, the ritual slaughtering of an ox, as an emetic to cleanse the body.	Rare
55	Specialist Tweni	<i>Dianthus thunbergii</i> Hooper iNdlelazimhlope Dold 1719	It is either drunk or used as a wash to cleanse the blood.	Rare; open grassland.
56	Specialist Tweni	<i>Gunnera perpensa</i> L. - iPhuzi Dold 1808	Infusion of roots taken orally to cleanse the blood.	Rare; collected towards Alice.

57	Specialist Tweni	<i>Pteronia incana</i> (Burm.) DC. iBhossies. Dold 1500	Used to relieve coughing. Mixed with <i>Brachylaena</i> and <i>Clausena</i> , boiled and drunk for coughs.	Collected on the outskirts of the village.
	Key informant Tweni	<i>P. incana</i> (Burm.) DC. iBhossies.	Taken for fever and to expel phlem. It is mixed with <i>Brachylaena</i> and boiled in water, 1 teaspoon is taken as needed.	Collected from the veld.
	Specialist Gwabeni	<i>P. incana</i> (Burm.) DC. iBhossies	The leaves are boiled in water and drunk as a tea 2-3 times a day for coughs (ukukhohlela). Not used for small children.	Collected from veld.
58	Specialist Tweni	<i>Cotyledon orbiculata</i> L. - iSundu	The pulp is used for body wash to treat rashes; only suitable for adults.	Collected on the outskirts of the village.
	Group Glenmore	<i>C. orbiculata</i> L. iPhewule	Food plant in drought.	
59	Specialist Tweni	<i>Hermannia</i> sp. iNceba	The roots are boiled in milk and drunk as a tonic for men only (virility).	Collected on the outskirts of the village.
60	Specialist Tweni	<i>Sansevieria hyacinthoides</i> (L.) Druce - isKolokoto	The leaf is heated over the fire and the juice squeezed into the ear for earache.	Collected on the outskirts of the village.
61	Specialist Tweni	<i>Haemanthus</i> sp. c.f. <i>albiflos</i> Jacq. uMaweni	The pulped root is boiled in water and used as an enema for pain in the body and painful joints, also to cleanse the blood, all ages but diluted for children.	Collected on the outskirts of the village.
62	Specialist Tweni	<i>Putterlickia pyracantha</i> (L.) Szyszyl. uMqhaqoba	Wood good for fire.	Collected on the outskirts of the village.
63	Specialist Tweni	<i>Eriospermum</i> sp. uNonyada	Roots pulped and mixed with cold water, taken half a cup a day, very good for stomach, equivalent to Chamberlains Colic.	Collected on the outskirts of the village.
64	Specialist Tweni	<i>Boscia oleoides</i> (Burch. ex DC.) Toelken - iVetrhathi Dold 1669	Wood is burned for Ukuqhumisa, smoking out evil from the house.	Common in bush clumps.
	Key informant Tweni	<i>B. oleoides</i> (Burch. ex DC.) Toelken iVetrhathi	The roots are burned ritually inside the house, the smoke wards off evil spirits.	
65	Specialist Tweni	<i>Indigofera sessilifolia</i> DC. iMpinglele Dold 1706	Whole plant boiled with <i>Cissampelos</i> (25 & 33) and <i>Asparagus</i> (115) and infusion taken 3 times a day for poison in the stomach.	Collected on the outskirts of the village.

66	Specialist Tweni	<i>Kedrostis foetidissima</i> (Jacq.) Cogn. - iThuvish Dold 1681	Root is used as an enema for fever, all ages, diluted for children.	Collected on the outskirts of the village.
67	Specialist Tweni	<i>Ehretia rigida</i> (Thunb.) Druce uMhleli.	Fruits eaten.	Collected on the outskirts of the village.
68	Specialist Tweni	<i>Capparis fascicularis</i> DC. iNtshila Dold 1714	Fruits eaten.	Collected on the outskirts of the village.
69	Specialist Tweni	<i>Urginea</i> sp. iNqweneba Dold 1704	Used as a body wash and a spray (ukushiza) for rituals.	Collected on the outskirts of the village.
70	Specialist Tweni	<i>Plumbago auriculata</i> Lam. - iChinchin Dold 1676	Ritual staff for amaGqhiru. Used as a cosmetic for the face, roots are boiled and taken to cleanse the blood, the flowers are eaten for the same. A forked stick is cut from the branch to stir foam (see no. 79) in rituals.	Collected on the outskirts of the village.
71	Specialist Tweni	<i>Solanum incanum</i> L. uMthuma	Roots cooked and bottled, drunk and also used as an enema for men with "drops" (STD).	Collected on the outskirts of the village.
72	Specialist Tweni	<i>Portulacaria afra</i> Jacq. - iGwanishe	Grown as a kraal fence, leaves are eaten.	Collected on the outskirts of the village.
73	Specialist Tweni	<i>Rhoicissus digitata</i> (L. f.) Gilg & Brandt uMqceba Dold 1717	Climbing stem is beaten until soft and used as a rope to fasten thatch onto roofs.	Collected on the outskirts of the village.
74	Key informant Tweni Women's group Ndwayana Child (scholar) Ndwayana	<i>Olea europaea</i> L. subsp. <i>africana</i> (Mill.) P.S. Green uMnquma <i>O. europaea</i> L. subsp. <i>africana</i> (Mill.) P.S. Green uMnquma <i>O. europaea</i> L. subsp. <i>africana</i> (Mill.) P.S. Green uMnquma	Used as a plate for slaughtered meat at rituals. Also used to make Xhosa sticks (iNduku: a carved straight stick used for protection, walking, digging etc). Used symbolically for all customs and rituals. Used symbolically for all customs and rituals.	Common Common Common
75	Key informant Tweni	<i>Capparis fascicularis</i> DC. iQhagula Dold 1714	Taken to cure nose bleeds. The roots are added to water and a cupful is drunk. Frequently used in summer, because people often get nose bleeds when it is very hot.	Collected in the veld.

76	Key informant Tweni	<i>Urginea</i> sp. uMqweneba Dold 1704	Used to ward off evil spirits, in and around the home. The bulb is boiled in water and then sprayed around the house.	Collected in the veld.
77	Key informant Tweni	<i>Sporobolus</i> sp. iNgca.	Used as thatching grass.	Banks of Keiskamma River.
78	Key informant Tweni	<i>Plumbago auriculata</i> Lam. iChinchin Dold 1676	Used to ensure good luck in court cases. The roots are boiled in water and used as a body wash (iyeza lokuhlamba).	Collected in the veld.
79	Key informant Tweni Women's group Ndayana.	<i>Dianthus thunbergii</i> Hooper iNdlazimhlope Dold 1810 <i>D. thunbergii</i> Hooper iNdlazimhlope Dold 1719	Used in Xhosa customs. The roots are mixed with water and a foam, igwebhu, is made from the mixture by whisking it with a forked stick: ixhayi. The foam is sprayed over the cow that is to be slaughtered. Used for washing to rid the person of evil, bad luck or misfortune, it is also used for "spraying"(ukushiza), this is literally the splashing of liquid onto whatever is being treated, often an animal to be slaughtered or the inner walls of a home.	Collected from veld; uncommon. Uncommon
80	Child (scholar) Ndayana	<i>Haplocarpha</i> sp. iZicwe	Used for bandaging circumcision wounds (ukwaluka).	Grassland
81	Child (scholar) Ndayana	<i>Gerbera viridifolia</i> (DC.) Sch. Bip. subsp. <i>natalensis</i> (Sch. Bip.) H V Hansen uPhantsikomga Dold 1718	Leaves used for bandaging circumcision wounds.	Grassland
82	Women's group Glenmore Specialist Gwabeni	<i>Bulbine latifolia</i> (L.f.) Roem. & Schult. iRooiwater Dold 1509 <i>B. latifolia</i> (L.f.) Roem. & Schult. iRooiwater	Infusion taken to treat bladder infections, also good for back-ache in both men and women. Crushed leaves are boiled in water and drunk as a tea to relieve burning urine (bladder infections). This can be mixed with <i>Dioscorea sylvatica</i> for same purpose.	Collected from around the settlement. Collected on the outskirts of the village.
83	Women's group Glenmore	<i>Pycnoporus cinnabarinus</i> (Jacq. ex Fr.) Karst. iSibindi (Note: this is a fungus)	Powder used to treat & prevent pimples and also acts as a sun protector.	Uncommon; in forest.

84	Women's group Glenmore Specialist Gwabeni	<i>Marrubium vulgare</i> L. - uMhlonyana Cocks 13 <i>M. vulgare</i> L. uMhlonyana	Infusion taken for coughs and sore throats. The leaves are boiled in water and drunk to sooth coughing (ukukhohlela).	Collected from the neighbouring village - kwaPickoli. Collected in the veld.
85	Specialist Gwabeni	<i>Nicotiana glauca</i> R.C. Grah. iCubamfene Dold 1501	A leaf is warmed on a fire and strapped on a boil/abscess (ithumba) as a poultice /compress to draw out the infection. It is replaced as soon as the leaf dries and becomes brittle.	Collected in the veld.
86	Specialist Gwabeni	<i>Brachylaena ilicifolia</i> (Lam.) Phill. & Schweick. uMgqebqa Dold 1504	Scraped bark is mixed with the bark of uMthathi (<i>Ptaeroxylon obliquum</i>) steeped in cold water and 2 spoonfuls taken 3 times a day for iswekile, diabetes.	Collected on the outskirts of the village.
87	Specialist Gwabeni	<i>Lippia javanica</i> (Burm. f.) Spreng. iNzininiba Dold 1505	The leaves are boiled in water and added to milk and one cupful taken 3 times a day for coughs/coughing.	Collected on the outskirts of the village.
88	Specialist Gwabeni	<i>Aloe tenuior</i> Haw. uMjinqa Dold 1507	The leaves are chewed to relieve heart-burn. An infusion of the sap is used as an enema for constipation (uqhinile) for children.	Collected on the outskirts of the village.
89	Specialist Gwabeni	<i>Teucrium trifidum</i> Retz. - uBuhlungu Dold 1508	It is mixed with <i>Hermannia</i> sp. (60) and boiled in water. This is given to goats with stomach cramps/bile from a baby bottle two times a day.	Collected on the outskirts of the village.
90	Specialist Gwabeni	<i>Catharanthus roseus</i> (L.) G.Don. - iFlawa Dold 1511	The bark is scraped off and soaked in cold water and drunk for diabetes (iswekile).	Collected on the outskirts of the village.
91	Specialist Gwabeni	<i>Arctotis arctotoides</i> (L. f.) O. Hoffm. uBhushwa Dold 1512.	A infusion is made by boiling a plant in water. This is used as an enema (uku-cima) for children with sore stomach but must be used sparingly as an over strong infusion can be dangerous. Also used for goats that appear "drunk" and cannot stand, a small amount is poured onto a cloth and bound onto the animal's nose daily.	Collected on the outskirts of the village.
92	Specialist Gwabeni	<i>Ruta graveolens</i> L. iVentrit Dold 1513	Mixed with brandy in a teaspoon full of a mother's milk and given to a baby with wind (onomoya).	Collected on the outskirts of the village.
93	Specialist Gwabeni	<i>Malva parviflora</i> L. iJongilanga Dold 1514	An infusion is made by boiling the leaves in water, this is used as a gargle for toothache (izinyo).	Collected on the outskirts of the village.

94	Specialist Gwabeni	<i>Exomis microphylla</i> (Thunb.) Aell. uMvenyathi Cocks 7	An infusion in cold water is made. This is taken for rash/pimples (irawuzela) caused by eating freshly killed meat. Also a rash (scabies), (iratshalala) on children who swim in dams that pigs wallow in.	Collected on the outskirts of the village.
95	Specialist Gwabeni	<i>Withania somnifera</i> (L.) Dun. uBuvimba Dold 1516	The large woody rootstock is peeled and pieces of the raw flesh are chewed to relieve coughing (ukukhohlela).	Collected on the outskirts of the village.
96	Specialist Gwabeni	<i>Ledebouria revoluta</i> (L.f.) Jessop iKreketsane Dold 1518	The bulb is pulped and used as a body wash at night (iyeza lokuhlamba) to expel bad dreams/bad luck and fear. Also boiled in water and given to children to alleviate wind (onomoya), one spoon a day.	Collected on the outskirts of the village.
97	Specialist Gwabeni	<i>Rumex steudelii</i> Hochst. ex A. Rich. iDololenkonyane Dold 1519	The rootstock is pulped and infused in cold water and drunk for relieving kidney pains, ie. sore waist (isinqe).	Collected on the outskirts of the village.
98	Specialist Gwabeni	<i>Sarcostemma viminalis</i> (L.) R. Br. uMbelebele Dold 1666	The stems are dried, powdered and mixed with water, this is given to cattle to encourage lactation (isaqakha).	Collected on the outskirts of the village.
99	Specialist Gwabeni	<i>Pelargonium reniforme</i> Curtis uMkumiso Dold 1667	The roots are boiled in water and the infusion is taken for bloody stools (isiso se gaza).	Collected on the outskirts of the village.
100	Specialist Gwabeni	<i>Boscia oleoides</i> (Burch. ex DC.) Toelken - iVetrhathi Dold 1669	Roots are dried and burnt, the smoke drives away evil spirits (ukuxhotha into semdhaka).	Collected on the outskirts of the village.
101	Specialist Gwabeni	<i>Rhus incisa</i> L. f. var. <i>effusa</i> (Presl) R. Fernandes uNonqutyu Dold 1670	The bark from the roots is scraped off, dried and powdered, this is mixed with cold water and taken for internal bleeding (isiso se gaza) and to heal fractured bones.	Collected on the outskirts of the village.
102	Specialist Gwabeni	<i>Urginea altissima</i> (L.f.) Baker uZabokwe Dold 1671	The base of the bulb with roots intact is boiled in water and drunk (half a cup) as a purgative (ukugaba) to cleanse the body.	Collected on the outskirts of the village.
103	Specialist Gwabeni	<i>Cadaba aphylla</i> (Thunb.) Willd. iStrom Dold 1672	The root is burnt and smoke inhaled to relieve headaches. It is commonly used to ward off lightning (izulu) sent by evil or jealous people. A seedling is planted on either side of the door.	Collected on the outskirts of the village.
104	Specialist Gwabeni	<i>Marrubium vulgare</i> L. - iMbuya Cocks 13	Eaten as an imfino - wild spinach.	Collected on the outskirts of the village.

105	Specialist Gwabeni	<i>Brachylaena elliptica</i> (Thunb.) DC. isaGqheba. Cocks 15	The leaves are chewed and swallowed two or three times a day to relieve dry coughs and asthma.	Collected on the outskirts of the village.
106	Specialist Gwabeni	<i>Becium burchellianum</i> (Benth.) N.E. Br. uBhubhusi Cocks 16	The leaves are boiled and taken as a tea for coughs. The leaves can be boiled and used as a steam for fever. This induces profuse sweating.	Collected on the outskirts of the village.
107	Specialist Gwabeni	<i>Secamone filiformis</i> (L. f.) J.H. Ross uMbijela Cocks 2	Used for livestock suffering from weak back legs known as umkhondo (staggers). The stem is ground and mixed with water, the infusion is given to the animals to drink.	Collected on the outskirts of the village.
108	Specialist Gwabeni	<i>Ledebouria</i> sp. c.f. <i>revoluta</i> (L.f.) Jessop isiThithibala Cocks 22	The tunic of the bulb is ground and boiled and left to soak for a day, then used as an enema to relieve back-ache.	Collected on the outskirts of the village.
109	Specialist Gwabeni	<i>Arctotis arctotoides</i> (L. f.) O. Hoffm. isKwamba Dold 1512	The leaves are cooked and eaten with mealie-meal, wild spinach plants are commonly known as imfino.	Collected on the outskirts of the village.
110	Specialist Gwabeni	<i>Azima tetraacantha</i> Lam. - iGcegceleya Cocks 6	The root is ground and bottled in cold water. This is given to livestock experiencing birthing problems (ukumelwa).	Collected on the outskirts of the village.
111	Specialist Gwabeni.	<i>Bulbine frutescens</i> (L.) Willd. iYakayakana. Dold 1510	Rootstock is sliced up and boiled to make an infusion for burning urine - bladder infections. Also used as an enema to relieve wind (onomoya) in weaning babies.	Collected on the outskirts of the village.
112	Specialist Gwabeni	<i>Gasteria bicolor</i> Haw. - iNtelezi Dold 1517, 1697	The leaves are pulped and used as a body wash (iyeza lokuhlamba) to prevent bad dreams and fear of the unknown, the same pulp is infused in water and sprinkled all over the floor and walls of the bed-room to chase away bad spirits, (ukutshiza). A small amount can be mixed with water and drunk as a tea to induce vomiting (ukugaba) for cleaning the stomach.	Collected in the veld.
113	Key informant Nomtayi	<i>Grewia robusta</i> Burch. umNqabaza	Can be eaten as a fruit, but very bitter.	Common

114	Specialist Gwabeni	<i>Silene</i> sp. Ubulawu Dold 1502	Thick fleshy roots are crushed and steeped in cold water, the infusion is warmed and drunk. Up to a gallon is taken until vomiting (ukugaba) occurs. A well known purgative to clean the stomach.	Uncommon; collected in the surrounding veld.
115	Specialist Tweni Specialist Gwabeni.	<i>Asparagus</i> sp. uMathunga <i>Asparagus</i> sp. uMathunga	The roots are mixed with water and taken to heal broken bones, all ages. The roots are dug up and mixed with cold water to heal broken bones. Two teaspoons are taken. Also used to heal broken bones in livestock. The root is cut up and bottled in water with a certain amount of <i>Dioscorea</i> tuber. (<i>Dioscorea sylvatica</i> known as iskorpaati) One teaspoon of the infusion is taken three times a day for healing broken bones.	Collected in the village. Collected in the veld.
116	Group discussion Nomtayi	<i>Ptaeroxylon obliquum</i> (Thunb.) Radlk. - uMthathi Dold 1820	Xhosa customs (isiko). The branches are used as a platter to serve meat from ceremonially slaughtered animals (goats).	Common

APPENDIX 2: FORT MONTGOMERY: SITE SPECIFIC CULTURAL ARTIFACTS

Dr Webley of the Albany Museum's Archaeology Department has ascertained that a sacred tree where the amaXhosa have prayed for rain in the past is located in the Double Drift Reserve.

The site was visited with a single, unemployed, male informant, about 60 years of age, from Ripplemead village. The tree is located inside the Reserve complex on the farm previously known as Fort Montgomery (33°02'55"S; 26°57'35"E), next to a small dam. The tree was identified as *Sideroxylon inerme*, a milkwood, known as *uMqwashu* in Xhosa. The informant told us that when he was a child "he had seen all the people in the whole district gather here, they had worn lots of beautiful beads and had drunk lots of beer, they had asked the ancestors to please send rain, here they had slaughtered two goats and worn the skins". This process had reportedly taken an entire morning and after lunch the people returned to their homes whereupon it began to rain. He told us that nowadays people went to church to ask the Bible for rain but that this had never had positive results.

Approximately 1.5km away is another site (33°01'50"S; 26°57'40"E) on an open hillside with two large *Pappea capensis* trees, called *iLitye* in Xhosa. Here we were told that people would gather to ask the ancestors to bring rain and that they were "real" Xhosas (*amaQaba* - traditionalist), most of whom are now dead. After the ceremony the people would gather in the shade of the two trees and slaughter goats and drink beer, when they returned home in the afternoon it would begin to rain.

We asked if people still prayed for rain, and were told that "nowadays people have thrown all that away, since the white people had come". We asked why these specific trees were chosen, and were told that it was because they were tall and caught the wind. It is interesting to note that the tree species appears not to be crucial but that the symbolic association with water is important.

As far as the authors have been able to ascertain, this practice has not been previously recorded in literature.